Mariners' Alerting and Reporting Scheme

MARS Report No 359 September 2022

MARS 202237

Hold access fatality/lack of oxygen

As edited from the Marshall Islands' Maritime Administrator report issued 6 January 2020

➔ A bulk carrier loaded with coal was at berth and crew were preparing to discharge. The bosun, fitter, and deck cadet were to open all the cargo hold hatch covers. After the hatch cover for cargo hold 1 was opened, the fitter told the bosun that he needed to enter the access way to hold 1 to retrieve an air nozzle which he had dropped while clearing the hatch coaming at the previous port.

The bosun and fitter opened the aft access hatch to cargo hold 1 but the bosun told the fitter to wait at least 20 minutes before entering. Some time later, the deck cadet walked by the cargo hold and looked into the open hatch. He saw the fitter lying motionless below on the coal close to the access ladder. He immediately notified the bosun using his portable radio. The bosun quickly arrived on scene and, without raising the alarm, went directly down the access ladder in an attempt to rescue the fitter. Shortly after entering the cargo hold, the bosun lost consciousness.

The Chief Officer heard the deck cadet's radio transmission and went to the access hatch. He immediately recognised the need to carry out an enclosed space rescue. The alarm was raised and crewmembers assembled and donned breathing gear. The two victims were extricated; the bosun regained consciousness after being brought on deck but the fitter was not breathing and had no pulse. Despite resuscitation efforts the fitter was pronounced deceased at a local hospital.

Among other things, the investigation found that:
The Company's enclosed space entry procedures were not followed. In particular, the ship's officers had not been notified of the need or intention to enter the hold. The first, failed, attempt to rescue the fitter without initiating enclosed space rescue procedures was a grave error that not only delayed the recovery of the fitter but put the bosun's own life in danger.

There was a distinct lack of awareness on the part of certain crewmembers on the hazards of entering a cargo hold containing coal without first complying with the Company's enclosed space entry procedures.

Initiatives taken after the investigation:

Locking devices were fitted to the access hatches for all cargo holds and other enclosed spaces on board the vessel.

The Company's SMS was updated to require permanent signs at the entrance to enclosed spaces warning of the risk of asphyxiation if entered without taking proper precautions.

A training initiative was implemented to increase awareness of the hazards of entering enclosed spaces without taking proper precautions.

Lessons learned

- Identifying all enclosed spaces on a vessel and posting a reminder at the entrance to each space can be considered a best practice.
- Signs are not enough! Many vessels now routinely have signage posted at the cargo hold access hatches that prohibit entry unless the enclosed space entry procedure is followed. Yet, year after year, crew are still dying in cargo holds with less than adequate oxygen or the presence of other gases that do not support life.
- Locking devices on cargo hold access hatches are one way to mitigate risks of unauthorised entry but the best protection is training and awareness of the risks. A cargo hold and its associated access ways are enclosed spaces.

MARS 202238

Offshore supply vessel collides twice in 45 minutes

As edited from NTSB (USA) report MIR 22-04

➔ A Coast Guard buoy tender was working in a restricted river waterway to service buoys that were shifted or missing due to a recent hurricane. The bridge team consisted of, among others, two officers and the Master. It was full daylight and visibility was good. The tender, displaying day-shapes for a vessel restricted in her ability to manoeuvre, was working near the edge of the navigable channel with the ebb current astern.

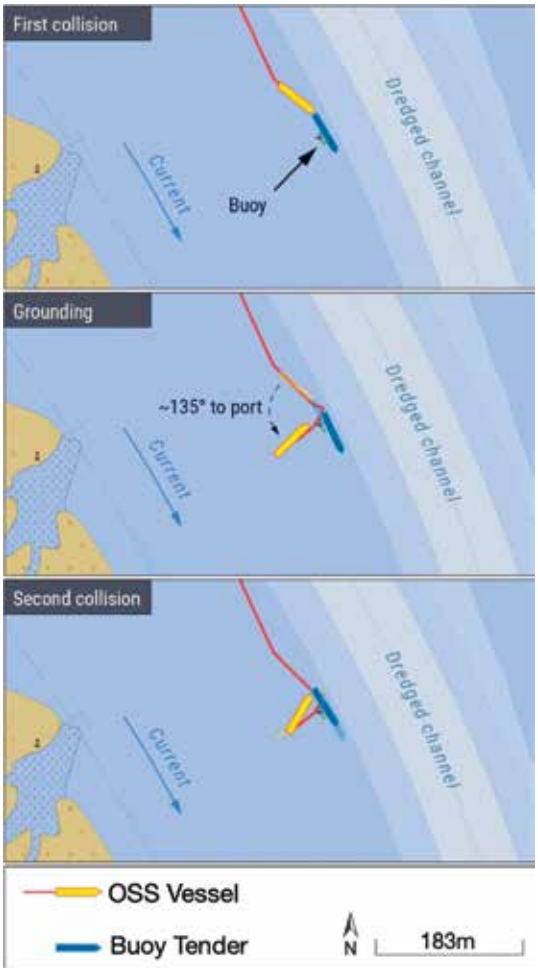
An outbound offshore supply (OSS) vessel left berth upstream of the buoy tender. Around this time, the buoy tender crew had secured a large buoy on deck; the crew were heaving in the chain while an officer on the bridge used the DP system to position-check the deadweight anchor.

As they approached, the Master of the OSS vessel contacted the buoy tender via VHF radio to request a 'one-whistle' passing arrangement; that is, the OSS vessel would overtake (pass) the tender on their starboard side – outside the channel. The request was unusual, but the bridge team of the buoy tender assumed the OSS vessel bridge team knew what they were doing and did not query it. On board the OSS vessel, the Master had assumed – without consulting his electronic chart system (ECS) – that the buoy tender (and buoy) were 'off-station' and that there was enough water on the starboard side.

At 1542, the OSS vessel made a slight course change to starboard in preparation for passing the buoy tender on their starboard side. Up to that point, the OSS vessel had been making about 13 knots. As the OSS vessel approached the buoy tender, the reading on its depth sounder dropped quickly, so the Master aborted his attempt to pass starboard of the buoy tender. Now faced with the imminent danger of collision, he then reversed the OSS vessel's engines and used the bow thruster and rudder to turn to port to try to avoid hitting the buoy tender.

A safety officer on the deck of the buoy tender radioed the bridge about the impending collision. The commanding officer made a ship-wide announcement to prepare the crew for collision while the conning officer sounded five short blasts on the ship's whistle.

At 1544, the bow of the OSS vessel collided with the stern of the stationary buoy tender while making 6 knots. The OSS vessel then pivoted and slid down the tender's starboard side and grounded on the mud banks to the starboard of the buoy tender. Some 45 minutes later, with the buoy tender still in the same position, the OSS vessel re-floated. The Master of the OSS vessel attempted to manoeuvre around the stern of the buoy tender but the ebb current set it onto the stationary Coast Guard vessel. Recognising that a second collision was imminent, the buoy tender's Master made another ship-wide announcement warning the crew to brace for impact. The offshore supply vessel's starboard bow struck the tender's starboard quarter.



The investigation found, among other things, that:
The OSS vessel's Master had assumed that the stationary buoy tender's position was not at the edge of the channel. This led to his decision to pass the buoy tender on its starboard side. Last minute manoeuvres, initially to avoid grounding and then to avoid collision with the buoy tender were unsuccessful. Another factor contributing to the collision was that the buoy tender crew did not question the passing arrangement proposed by the OSS vessel's Master.

The buoy tender remained connected to the heavy buoy anchor on the sea bottom and was therefore unable to manoeuvre and evade the OSS vessel. If the crews had communicated more fully with each other, they might have agreed for the OSS vessel to wait until the buoy tender could move on.

Lessons learned

- Too many assumptions and too little communication can lead to bad outcomes.

MARS 202239

Hot bitumen burn

Routine inspection and cleaning maintenance was to be undertaken on a vessel's fuel pump strainer. In preparation for this task, the secondary heating unit (SHU) had been started the day before to melt the bitumen inside the strainer. Two engine crew were assigned the job, and the SHU was stopped before they began work on the pump strainer.

To begin, one crewmember used a spanner to loosen the vent nut on the strainer. As the nut came loose, hot liquid bitumen was ejected from the vent. The bitumen hit the crewman's right hand causing burns; the crewmember was not wearing work gloves. He was immediately brought to the accommodation and given first aid. After consulting the company doctor, he was started on a course of antibiotics as a precautionary measure.

Lessons learned

- Wearing proper personal protective equipment (PPE) is a minimum precaution in any work space.
- Over and above wearing proper PPE, risk assessments, even if ever so cursory (what could happen?), should be done to prior to executing a task. In this instance, given the preheating of the bitumen, it would seem common sense to assume that hot bitumen would excrete from the loosened vent nut.

MARS 202240

Contact with a buoy and near collision

A VLCC in ballast was approaching port for anchoring. The pilot was confirmed for 10:00. Weather conditions were good with a northerly wind of about 10 knots, good visibility and slight sea conditions. A tidal stream was running WSW at about 1.8 knots. The engine was put to dead slow ahead to drop off speed and adjust the vessel's arrival at the pilot boarding area for the agreed time.

At 09:37, the Master asked the OOW if he had established a visual contact with the pilot boat. The OOW responded positively. The bridge team was confident that the pilot boat would be at the designated position before their vessel, so no action to further slow or stop the vessel was taken. Several minutes later, with the vessel steering 300 degrees and with a speed of 5.8 knots, the remaining distance to the pilot station was about 1.2nm.

At 09:50, the vessel was heading 315 degrees at a speed of about 5.3 knots. The distance from the pilot station was now only about 0.7nm. The Master stopped the engine. The vessel continued to slow and the heading now increased slowly to starboard. The vessel was closing on a buoy. At 10:00 the speed was about 4 knots and the pilot boat had not yet arrived. The Master ordered hard starboard and set the main engine to dead slow ahead in order to avoid the buoy but to no avail; they struck the buoy about four minutes later on the port side near midships. The buoy slid down the vessel's port side and cleared the stern with only minor damage.

The vessel was now drifting with a Speed Over Ground (SOG) of 3.4 knots, on a trajectory towards a nearby anchored vessel. The Master attempted to stop the vessel, but the distance to the anchored vessel was now only 0.5 nm. The Master quickly concluded that it was not feasible to stop the vessel. Instead, by putting 'Full Ahead' on the engine in combination with a succession of wheel alterations (hard to starboard and then hard to port) they managed to avoid contact with the anchored vessel (images 1-4, below). About 20 minutes later, the pilot boarded and subsequently safely anchored the vessel in the anchorage area.

The company report found, among others, that:

- The passage plan lacked the appropriate precautions and contingency arrangements. Specifically, the speed of approach and the waiting area for the approach were not adequately planned.
- The large drift angle and the proximity of navigational hazards was not determined at an early stage.
- The effect of the current on the vessel's drift was not effectively monitored and assessed. As a result, the bridge team did not adjust the vessel's course and speed in a timely manner when approaching the pilot boarding station.
- Bridge Resource Management (BRM) was less than adequate. The Master did not explicitly inform the ship's bridge team about his intentions related to approaching and manoeuvring. As the ship progressed, the OOW's comprehension of the situation did not trigger any actions for clarification or corrective action.
- The OOW did not provide sufficient information related to the pilot boat approaching. Instead, he confirmed that the pilot boat was approaching without informing the Master of the actual distance from the vessel and the time needed to arrive alongside. As a result, the Master wrongly assumed that the pilot boat was closer than it actually was, so he continued on instead of stopping.

Lessons learned

- Effective BRM should be a working culture – a safety habit that is embraced and practised by all navigating officers. Closed-loop communications should always be used to eliminate any doubt or ambiguity.

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